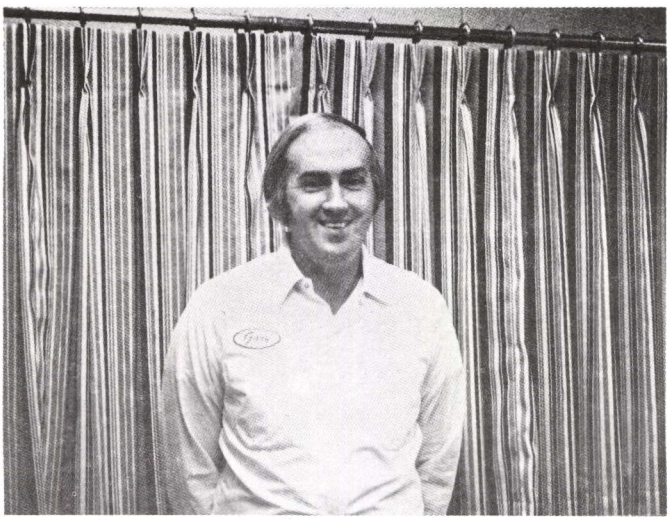
South Carolina Aeronautics Commission

Aviation Newsletter

NO. 2 FEBRUARY 1976 VOL. 26

INSTRUCTOR AND MECHANIC WINNERS ANNOUNCED



GARY WARD

DOUG MERRITT

Mr. George Gary Ward of Stevens Beechcraft, Inc., Greer, South Carolina, was selected as the winner of the 1975 FAA Aviation Mechanic Safety Awards Program for the State of South Carolina.

Mr. Ward was selected for his consistent demonstration of a high level of professionalism and excellence in the performance of his duties. His thoroughness and persistence during inspections of PT-6A turbine engines resulted in revision of inspection requirements that contribute significantly to aviation safety.

Gary is a native of Greenville; graduate of Travelers Rest High School; is married and the father of two sons. He has been actively engaged in aviation maintenance since 1961. He joined the maintenance organization of Stevens Beechcraft in 1965, following a four year tour with the United States Navy. He is presently the foreman of the engine shop, supervising seven technicians.

Douglas W. Merritt of the Shaw AFB Aero Club was selected as Flight Instructor of the year for South Carolina. Doug started instructing part-time with the McGuire AFB Aero Club immediately after receiving his rating and continued part-time instructing at the Shaw AFB Aero Club since his arrival at Shaw AFB in April 1970. Since his retirement from the Air Force August 31, 1975, he has been instructing full time at Shaw. Although instructing part-time he was extremely active and has accumulated a total of 3,471.6 flight instruction hours and has recommended 92 candidates for license.

Doug is presently serving his second one-year term as the Safety Officer for the Shaw AFB Aero Club. He has the complete responsibility for developing the club's safety program and for conducting a monthly safety meeting that is mandatory for all members. In September 1975 Shaw Aero Club received a very thorough inspection from Tactical Air Command Headquarters covering all phases of Aero Club operations. The Club Safety Program was rated excellent with no discrepancies. This rating can be directly attributed to the outstanding efforts of Douglas W. Merritt.

During the past year he received his Multi-engine indorsement on the CFR entered into training at Miller Aviation to obtain an ATR, and attended the Flight Instructor Refresher Course at Columbia, South Carolina in October 1975. He also completed the courses at the Shaw AFB Extension of the University of Albuquerque, New Mexico with a 3.95 grade average out of a possible 4.0.

NON DIRECTIONAL BEACONS

The non directional beacon for Conway has been installed and is now in operation as a VFR beacon. This beacon transmits on the frequency of 370 and the identifier is HYW.

Two more non directional beacons will be installed sometime in the near future. One at Manning, the frequency for this beacon will be 381 and the identifier is MNI and the other at the Winnsboro Airport.

Instrument approaches have been published for non directional beacon approaches at John's Island, Georgetown, Pickens and Sumter. As soon as properly rated technicians are found for the other airports, the instrument approaches will be published.

SOUTH CAROLINA AIRPORT PROGRAM

It is anticipated that the new Federal Airport Bill will be passed by Congress within the next 60 days. A number of airports in South Carolina have their project appropriations on file and they are awaiting the passage of the new bill to begin construction. Projects already on file will be the first to receive Federal funds. These include Charleston, John's Island; Columbia; Charleston AFB/Municipal; Myrtle Beach AFB/Civil Jetport; Florence City/County; Lancaster; Kingstree; Orangeburg; Clemson-Oconee; Lee County-Bishopville; Greenville Municipal; Gaffney-Cherokee County; Rock Hill.

There are approximately 35 additional airport in the State who are considering applying for Federal funds for construction or expansion. Some of these have been in the planning stage since 1970 but these have not submitted applications to FAA. Because of this they will probably not be considered for funds during the current year.

PROPS THAT FAIL

Although modern metal propellers are generally considered highly efficient and relatively maintenance-free, reports continue to come in of in-flight prop failure, many of which occur at a place where previous damage apparently existed. To guard against this type of incident, pilots and airplane operators are urged to make careful examination of the propellers a regular part of every preflight inspection; to refer any suspicious nicks, scratches, dents or cracks to a mechanic for analysis, corrective action if necessary; and to be positive that all prop repairs meet the manufacturer's recommendation and/or pertinent regulations. Clean your propeller blades often (it is impossible to properly inspect a dirty prop) using a non-oil base solvent---- never use an alkaline cleaner. CAUTION: exceeding recommended RPM limits puts added strain on the propeller.

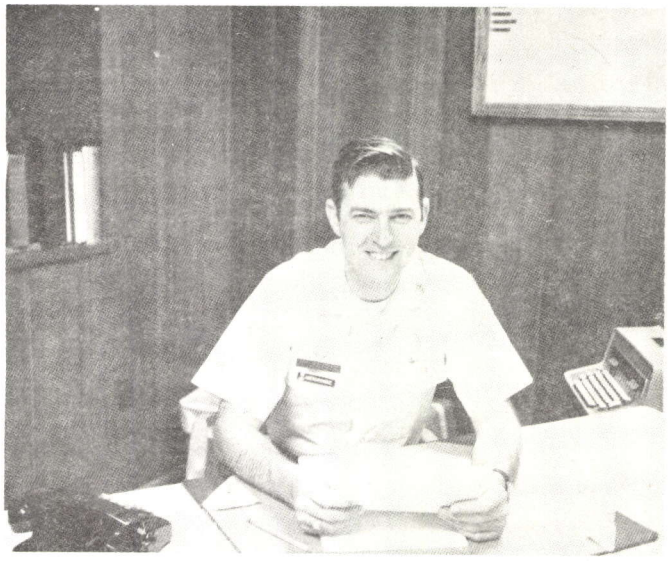
(NAFI BULLETIN)

NEW COMMANDER FOR CIVIL AIR PATROL

On Sunday, January 25, Lt.Col. Douglas T. Abercrombie officially assumed command of the South Carolina Wing Civil Air Patrol. Lt.Col. Abercrombie replaces Col. John Taylor who retired from the command after many years service with the Wing.

Lt.Col. Abercrombie joined the Civil Air Patrol in 1959 and has served in many capacities during his career. He served as commander of cadets in Tampa Florida, Topeka, Kansas; and Charleston, South Carolina and he was also director of cadet programs for the North Carolina Wing and director of seniors for the South Carolina Wing. Prior to becoming wing commander, he served as deputy director of the South Carolina Wing.

The South Carolina Wing was rated in the top 10 in 1975 and Lt.Col. Abercrombie's goal is to improve this rating in all areas.



Lt.Col. Douglas T. Abercrombie

REGIONAL SOARING MEET

More than 50 sailplanes are expected at Bermuda High Soaring Center (located at Chester Municipal Airport) to participate in the annual Region 5 Soaring Championships, April 20-24. Being the first contest of the season, Region 5 draws from the soaring community of the entire eastern U.S. with contestants from New England as well as Florida. Later this year, in June, Bermuda High will conduct the 1-26 Nationals, a one design competition in the Schweizer 1-26 sailplane which will draw competitors from the ıtire U.S. Bermuda High is now firmly established as the most outstanding soaring site east of the Mississippi.

Sailr' ffi in the Chester area will increase steadily between now and the contest as pilots arrive for practice. Official practice day will be April 19, most of the competing sailplanes will be making cross country flights throughout the contest area. The contest area consists of a large semicircle from Chester to the west , north and east. Among the turnpoints that may be used are Laurens, Fairview, Shelby, Hickory, Concord, Albermarle, Hartsville, Darlington and Camden.

Sailplanes lauching from Chester Airport will normally be conducted in the hours between 11:00 and 2:00 daily, during which the field will be closed to transient aircraft. Visiting aircraft are welcome at other hours; radio advisories may be obtained from Chester Unicom (122.8) or contest frequency (123.3). Aircraft flying in the contest area should keep a sharp eye for sailplanes either singly or in groups, particularly in the vicinity of cloudbase. FSS Hickory and Florence will be advised daily of the task routes and will include this information in their weather briefings. Visitors are welcome for the contest. This will be the first glider meet of the year, and one of the largest in the east. Don't miss this opportunity to see the experts in competition. Please check with Flight Service tc determine when Chester Airport will be closed.

FAA NOTES

ENGINE OPERATIONS----

(This information is taken from a new handout, "Tips on Engine Operation in Small General Aviation Aircraft" and is available in the General Aviation District Office. "Tips on Engine Operation" was written by Mr. J.A. Diblin, Manager of Customer Relations, Avco-Lycoming Division for the AOPA Air Safety Foundation.)

Pilots often ask what basic information or help is available to them before flying a new or different aircraft. The airplane owner's manual and engine operator's manual are the basic reference and have most of the information the typical pilot will need, augmented and updated by the manufacturer's bulletins; and there is no substitute for a thorough checkout for the pilot by a competent flight instructor in the specific airplane being flown for the first time. His guidance will not only be helpful in the proper flying of the aircraft, but his instruction on the proper operation of the engine can go a long way toward safe and efficient handling of the powerplant.

Leaning----The most frequently asked question during flights around the country, and also in the mail is concerned with handling the mixture or leaning and cruise control. In any discussion of leaning, remember that there are three basic types of fuel metering system used in general aviation: (1) float type carburetor, (2) pressure carburetors, and (3) fuel injection. Furthermore, there are also a variety of fuel injection systems in the field. The airplane manual accompanying the aircraft advises what type of fuel metering the engine has, and how to properly operate it. All of this can't be reviewed herein; however, there are a few basic suggestions on leaning that can be made which apply to all the piston engines used in general aviation.

Proper leaning at cruise power is both practical and economical for the pilot. This kind of leaning technique reduces the cost of fuel, provides for a smoother operating engine with less vibration, it extends the range of the aircraft, reduces the possibility of spark plug fouling, establishes more normal engine temperatures--particularly in cold weather, and when leaned to best power will provide the fastest airspeed for the power setting.

Damage to an engine by leaning is usually done at takeoff or climb powers. Leaning the typical general aviation piston type engine at medium cruise power or less rarely damages an engine as long as the cylinder head and oil temperatures are not excessive and the engine operates smoothly.

There is still some confusion among operators concerning leaning and the 5,000 ft. reference generally used in the field. With the exception of turbocharged and supercharged engines the 5,000 ft. reference point is used for climb purposes in that manufacturers of the small four and six cylinder normally aspirated engines recommend that during climb the pilot maintains his mixture full rich until he is beyond 5,000 ft. in order to prevent overheating and detonation in the engine. If climb continues above 5,000 ft., then this type of powerplant may be leaned somewhat, but only for engine smoothness and efficiency inasmuch as the climb configuration is not a fuel economy one. Climb about 5,000 ft. permits some leaning because the available horsepower on the normally aspirated engine has been reduced to the point where leaning could not damage the engine. Further more, this type of engine would be running too rich.

Now that we have stressed the fact that 5,000 ft. is a basic climb reference point for the normally aspirated engine we have been discussing, it should be easier for the operator to understand that leaning these models of powerplants at cruise below 5,000 ft. is a simple matter. With this type of normally aspirated engine, leaning at cruise (75% power or less) may be accomplished at any altitude providing the pilot follows the limitations provided in the airplane manual if the aircraft has a manual mixture control. As an example of what we have said herein, let us suppose that the pilot wishes to fly cross-country over flat terrain at 20,000 feet. As long as he does not exceed the cruise power recommendation by the manufacturer, he may lean his engine at that cruise power wherever he desires as long as temperatures are not excessive and the engine operates smoothly.

Good Power Management----Pilots with some exper-

ience tend to believe in proper management in the operation of the specific airplane being flown. This is another way of saying it is best to use the engine wisely and a smooth hand on the throttle is an excellent rule to follow.

It may interest pilots and mechanics to learn that the engine manufacturers are able to determine a great deal about how their engines are operated by pilots out in the field by tearing down and carefully inspecting the engines which are returned to the factory. As a brief example of the latter statement, an engine which has been returned to the factory and at teardown exhibits rust and corrosion inside the cylinders, or black spots and pitting of the cylinder walls, has been flown infrequently. Without frequent flights, water and acids collect in an engine which are normally cooked out during frequent flights. Another engine returned to the factory had numerous oil leaks. Inspection revealed that the rubber seals throughout the engine were baked and brittle and the ignition harness was in the same condition. This was caused by excessive heat which baked and destroyed the rubber items in the engine. It can be brought on by prolonged running on the ground, or leaking cowling or deteriorated baffles.

Cracks in the cylinder heads around the spark plugs or valve ports tell us a story too. Where this is observed in several cylinders in an engine, it frequently indicates an abrupt change in temperature. In the operation of any type of piston engine, cracked cylinders indicate that the pilot has been operating the engine at a fairly high temperature and then abruptly reducing the power or closing the throttle and thereby suddenly cooling the cylinder head down. In order to prevent this condition, the pilot must operate his powerplant so that his engine does not undergo sudden changes of temperature. Cylinders with cracks are costly to replace.

Good power management by the pilot also considers the difference in performance in his engine in warm weather vs. cold weather. He should be cognizant of the old rule of thumb reference, that the engine manufacturer establishes and calibrates engine horsepower at 59 degrees F standard and sealevel, and for every increase of 10 degrees F over 59 degrees F standard, the engine loses 1% of its horsepower. With this basic information, but without previous experience in taking off from a high elevation airport on a warm day, the pilot will be alert to the reduced performance of his aircraft and engine and utilize sound power management.

When we stress good power management, it should not confuse the pilot so that he "babies" his powerplant. The modern direct drive engine was designed to operate during cruise generally at 75% power, and the geared more complex powerplants approximately at 65% power. The typical direct drive engine must run at a high RPM in order to get the necessary horsepower. We have observed single engine pilots cruising at a low RPM and mushing along in a nose up altitude because they were afraid to operate at 75% power, thinking it was not good for the engine. The same type of pilot rarely uses full power on takeoff with his normally aspirated engine for fear of "hurting" the engine. The engine manufacturer has stipulated the limitations on his engine, and most of the lower horsepower four and six cylinder powerplants not only recommend full power for takeoff, but permit it for an indefinite time period as long as engine temperatures are not excessive.

FAA INCREASES AIRCRAFT SEPARATION DISTANCES

Procedures requiring air traffic controllers to provide an extra mile of separation between small aircraft landing behind large and heavy aircraft because of the possible effects of wake turbulence are now being used.

Under the new procedures, effective November 1, 1975, FAA requires a 6-mile separation for small aircraft landing behind heavy aircraft and a 4-mile separation for small aircraft landing behind large aircraft. This additional mile of separation is required at the time the preceding aircraft is over the end of the runway.

Among the aircraft in the "Heavy" category (300-000lbs. or more) are the DC-10, L-1011, B-747, the C5A military cargo plane, and the larger versions of the B-707 and DC-8. "Large" aircraft (12,500-300,000 lbs.) include the B-727, B-737, the smaller B-707 and DC-8, and certain business aircraft such as the Sabreliner and Jetstar. The "Small" category (12,500-lbs. or less) covers most general aviation aircraft, including air taxis.

BREAKFAST CLUB NEWS

McCorkle and President Hawkins

The meeting on December 28, at the Greenville Downtown Airport was well attended. Fifteen aircraft and 45 members were at the Breakfast meeting. Mike McCorkle of Greenville Aviation welcomed the Breakfast Club. After the meeting members viewed a demonstration of the helio courier flown by Willis Tippin. The excellent weather on January 11 accounted for an unusually large number of aircraft at Aiken. One-hundred and five members were present for breakfast at the Holiday Inn and a total of 25 aircraft were counted.

The schedule for coming meetings is as follows:

February	8	Timmonsville
February	22	Spartanburg
March	7	Dillon
March	21	Holly Hill
April	4	Trenton
April	18	Rock Hill
May	2	Myrtle Beach

A special meeting will be held at Camden on June 6, to coincide with the EAA Old South Fly-In which will be held that weekend.

NEW OPERATOR AT GEORGETOWN

A new FBO under the name of Tidelands Air-Service began operations at Georgetown, S.C. Airport last week of October. Tidelands bought the lease on the FBO from Georgetown Aviation.

Owner of the new operation is Bob Johnson, not to be confused with Bob Johnston, who owned Georgetown Aviation.

Johnson reports that the new operation is open daily from 7:30 a.m. til 30 minutes after dark. Service at other times can be arranged by calling him at (803) 546-2323.

The operation is still in the organizational stages, but charter and flight training will be available soon. The company is a dealer for Texaco and handles both 100 octane and jet fuel.

Georgetown is lighted, has three 5,000 foot runways and has an approved NDB approach.

TRANSPONDER TEST

Effective January 1, 1976, FAR 91.177 required all transponder equipment used as specified in FAR 91.24, 121.345, 127.123, and 135.143 to be tested and inspected and found to comply with Appendix F of Part 43.

These tests and inspections may be performed by an appropriately certificated agency such as a repair station or manufacturer.

Owners/Operators should assure a proper entry is made in the aircraft records to show compliance with this requirement.

If you have questions, please contact your General Aviation District Office, Box 200, West Columbia, SC, 29169.

MECHANIC REFRESHER CLINIC

The South Carolina Aeronautics Commission, the AOPA Air Safety Foundation and the Federal Aviation Administration are pleased to announce an important two-day workshop seminar for airframe and powerplant maintenance technicians of all skill and experience levels. This program will be held on March 6 and 7, 1976 at the Quality Inn in Columbia.

The Aviation Mechanics Refresher Clinic was developed and structured especially for the A & P mechanic to provide him with current information regarding General Aviation maintenance, repair, and servicing requirements and recommendations originating from government and industry sources. Mandatory and suggested changes and/or modifications for a wide variety of makes and models of General Aviation aircraft and their associated components will be identified and discussed in detail by FAA and cognizant manufacturers' maintenance representatives during each of these seminars.

A number of Aviation Mechanics Refresher Clinics will be presented throughout the year at carefully selected locations in the United States to enable the greatest number of A & P mechanics to attend with a minimum amount of time away from the job.

The AOPA Air Safety Foundation has long felt that a concentrated program such as the AMRC, would be extremely beneficial in helping to establish a vital link between the FAA, the manufacturer, and the A & P mechanic through which more reliable communications and better understanding could be achieved. In far too many instances the mechanic fails to get the word on new requirements and recommendations from both government and industry. In some cases, the lack of vital information in the hands of the mechanic when and where it is needed, has proven to be costly--not only in dollars and cents, but in terms of human lives as well. We believe that the AMRC program, as it develops, and expands will substantially reduce this "communications gap" by making all available current information easily accessible to the individual mechanic in a relaxed, informal atmosphere, where ample opportunity is provided for questions and answers on specific maintenance and repair problems.

We further believe that the well informed mechanic is the best--and the safest--mechanic. Our only interest is an increased air safety, and with that objective in mind we are cordially inviting every A & P mechanic, students, on-the-job trainees, and those concerned with General Aviation maintenance, to take advantage of this unique refresher training.

Representatives from the following companies on the program are: Airborne Manufacturing Co.; AOPA Air Safety Foundation; Champion Spark Plug Co.; Federal Aviation Administration; Bell Helicopter; Hartzell Propeller, Inc.; Hughes Helicopters/Division of Summa Corp.; Nickson's Machine Shop; AVCO Lycoming; Superior Air Parts Inc.

In order to insure that every interested person has an equal opportunity to attend the aviation Mechanics Refresher Clinic, we have kept the tution fee to an absolute minimum--$35 per person, including all course materials.

This low fee does not, of course, include transportation, to or from the Clinic site, meals, accomodations, or personal expenses. These items are, however, tax deductible as legtimate business expenses for those who make their living in General Aviation maintenance.

To enroll simply call toll free 800-638-0853 or write The Aviation Mechanics Refresher Clinic, The AOPA Air Safety Foundation, 7315 Wisconsin Ave., Washington, D.C. 20014 and request the registration form.

SOUTH CAROLINA AERONAUTICS COMMISSION
Box 1769
Columbia, South Carolina 29202

AG PILOT CONVENTION SET

The Board of Directors whosn in the picture above (l to r seated) are B.W. Curry, 2nd Vice President; Ken McNeil, Secretary-Treasurer; Elbert Page, President; and Woody McKay, 1st Vice President. Standing are George Gedra; Bobby Weatherly; Ray Tennant; James Price and Billy Lynam.

This group met in Timmonsville on January 9, 1976 and set the dates for the 1976 convention for February 11, 12, and 13. The Convention will be held in Columbia, South Carolina at the Town House Motor Inn on Gervais Street in downtown Columbia, The program will begin with registration on the afternoon of February 11 and will conclude with the annual banquet on the night of Friday, February 13, 1976.

A special feature on this years program will be an ag pilot refresher course conducted by the personnel from Clemson University. This school will take up the latest developments in regulations and use of pesticides and will also assist those who have not yet taken the required examination in their preparation for this task.

Pilots who have not passed the examination, will be given the opportunity to take it during the convention.

Exhibits and equipment from the leading aircraft & components manufacturers will be on display and President Page is expecting this to be the largest meeting to be held by the organization.

For further information contact Elbert Page, Rt. 1, Clio, S.C. 29525.